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Narutoshi Fukuzawa

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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.

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EXAMINER

GOMA, TAWFIK A

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**BEFORE THE BOARD OF PATENT APPEALS  
AND INTERFERENCES**

Application Number: 10/657,244  
Filing Date: September 09, 2003  
Appellant(s): FUKUZAWA, NARUTOSHI

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Harris A. Pitlick  
For Appellant

**EXAMINER'S ANSWER**

This is in response to the appeal brief filed 4/23/2008 appealing from the Office action mailed 11/26/2007.

**(1) Real Party in Interest**

The real party in interest in this appeal is TDK Corporation having an address 1-13-1, Nihonbashi, Chuo-ku, Tokyo, Japan, 103-8272

**(2) Related Appeals and Interferences**

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

**(3) Status of Claims**

The statement of the status of claims contained in the brief is correct.

**(4) Status of Amendments After Final**

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

**(5) Summary of Claimed Subject Matter**

The summary of claimed subject matter contained in the brief is correct.

**(6) Grounds of Rejection to be Reviewed on Appeal**

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

**(7) Claims Appendix**

The copy of the appealed claims contained in the Appendix to the brief is correct.

**(8) Evidence Relied Upon**

6683188	Kasada et al	6-2001
EP 1103962	Sabi	11-2000

**(9) Grounds of Rejection**

The following ground(s) of rejection are applicable to the appealed claims:

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 5, 7-9, and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasada et al. (US 6,683,188 B1) in view of Sabi et al. (EP 1,103,962 A2).

Regarding Claims 1-3, Kasada et al. teach an optical recording medium comprising a supporting substrate (substrate; see column 1, lines 33-35); a recording layer on the supporting substrate, the recording layer containing an organic compound as a major component; and light-transmitting layer (a protective layer made of an ultraviolet ray hardening; see column 1, lines 33-35) on the recording layer. See column 1, lines 30-38. Note that the recording medium absorbs light with a wavelength of 450nm or lower (more specifically 350-450 nm; see column 4, lines 64-66) for recording and reproducing information, wherein the organic compound in the recording layer includes a monomethine cyanine dye (see column 2, lines 13-32) that has the minimum value  $n_{\min}$  of its refractive index  $n$  (real part of the complex refractive index) within the range of 370 to 425 nm and has a refractive index  $n$  of 1.2 or lower and an extinction coefficient  $k$  (imaginary part of the complex refractive index) of 0.15 or above with respect to the

wavelength of the recording/reproducing laser light, and the organic compound, when absorbing the laser light, melts or degrades to bring about a change/increase in the refractive index, thereby effecting recording of the information. Note that once monomethine cyanine is used for the recording layer its characteristics are inherent, see for example figure 1.

Kasada et al. further teach that the monomethine cyanine dye contains a monomethine group with two nitrogen-containing heterocyclic rings positioned on ends of the monomethine group (see column 2, lines 13-20 also formulas 1-8 on column 2, line 45 through column 3, line 35), said two nitrogen-containing heterocyclic rings being selected from the group consisting of a combination of indolenine and indolenine (see column 14 line 65 and note, as shown in column 14, lines 60-62, that the two cyclic rings can be either the same or different with given list of possible rings), a combination of benzothiazole and benzothiazole (see column 15 line 3 and again note, as shown in column 14, lines 60-62, that the two cyclic rings can be either the same or different with given list of possible rings), and a combination of benzothiazole (see column 15 line 3) and quinoline (see column 15 line 9 and also note, as shown in column 14, lines 60-62 that the two cyclic rings can be either the same or different with given list of possible rings). Kasada et al. disclose a long list of organic dye compounds which are usable in combination with the monomethine cyanine dyes in column 14, line 50 through column 15, line 25.

Kasada et al. differ from the claimed invention in that they do not specifically show the dielectric layer being disposed on the recording layer. Sabi et al. on the other hand teach a recording medium with a dielectric layer 5 formed on the recording layer 4 (see column 4, lines 24-25). It would have been obvious to one of ordinary skill in the art at the time the invention was made to include a dielectric layer on top of the recording layer in the system of Kasada et al.

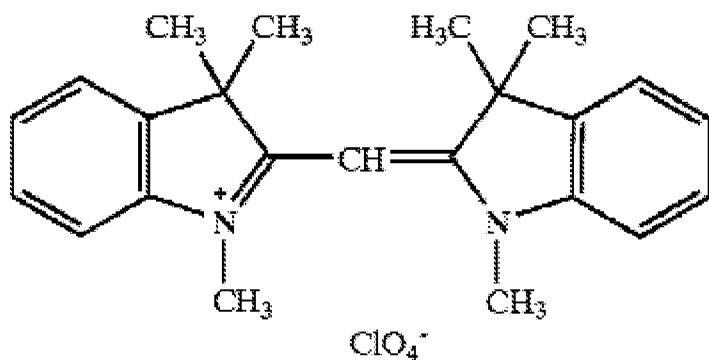
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since Sabi et al. teach that having the dielectric layer will protect the recording layer and also it prevents dissolving of the organic material or dissolving of a material constituting an adjacent layer into the recording layer(see column 3, lines 27-34).

Regarding Claim 5, as applied to claim 1 above and Kasada et al. further teach that the monomethine cyanine dye contains a monomethine group with two nitrogen-containing heterocyclic rings positioned on ends of the monomethine group, the two nitrogen-containing heterocyclic rings being identical to one another (with same or different cyclic cores; see column 14, lines 58-63). Note that Kasada et al. have many substitutes for the heterocyclic rings and in different ways.

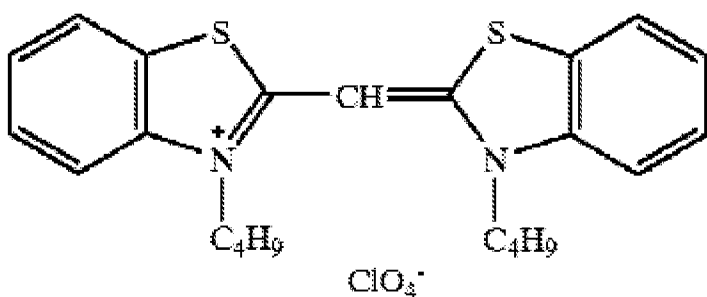
Regarding Claims 7-9, claims 7-9 are the combinations of claims 1-3 and 5 in a method claim format with identical limitations. Therefore method claims 7-9 correspond to apparatus claims 1-3 and 5 and are rejected for the same reasons of obviousness as applied above.

Regarding claims 11 and 12, as applied to claims 1 and 7 (respectively) above, Kasada et al. further teach that at least one organic compound in the recording layer includes at least one of the following monomethine cyanine dyes:

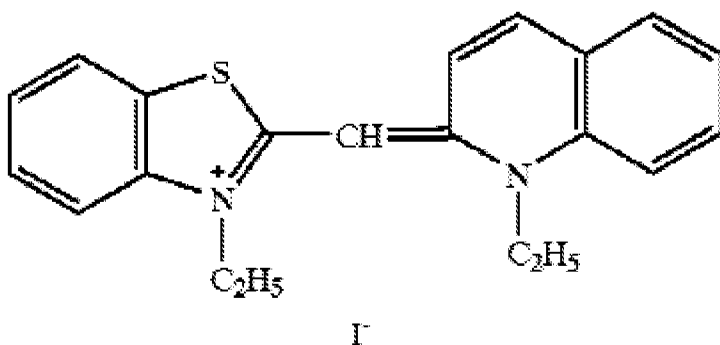


AA-1

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CC-1



BC-1

Kasada et al. disclose the following:

The monomethine cyanine dye contains a monomethine group with two nitrogen-containing heterocyclic rings positioned on ends of the monomethine group (see column 2, lines 13-20 also page 2, line 45 through page 3, line 35), said two nitrogen-containing heterocyclic rings being:

with respect to formula AA-I: indolenine and indolenine (see column 14 line 65 and note, as shown in column 14, lines 60-62, that the two cyclic rings can be either the same or different with given list of possible rings) with anion of chloric acid (see column 4, lines 38-42),

with respect to formula CC-1: benzothiazole and benzothiazole (see column 15 line 3 and again note, as shown in column 14, lines 60-62, that the two cyclic rings can be either the same or different with given list of possible rings) with anion of chloric acid (see column 4, lines 38-42),

with respect to formula BC-I: benzothiazole (see column 15 line 3) and quinoline (see column 15 line 9 and also note, as shown in column 14, lines 60-62, that the two cyclic rings can be either the same or different with given list of possible rings) with anion of iodic acid (see column 4, lines 38-42).

Claims 6 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kasada et al. (US 6,683,188 B1) in view of Sabi et al. (EP 1,103,962 A2) as applied to claims 1 and 7, above, further in view of Yanagisawa et al. (US 5,326,679).

Regarding Claims 6 and 10, Kasada et al. and Sabi et al. teach the limitations of claim 1 and 7 for the reasons discussed above. The combination of Kasada et al. and Sabi et al. differ from the claimed invention in that the recording layer does not contain quencher.

Yanagisawa et al. teach the use quencher in a recording medium for cyanine dyes (see abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used quencher in the system of Kasada et al. since Yanagisawa et al. teach the use of quencher for preventing photo deterioration of cyanine dyes (see abstract lines 11-14).

#### **(10) Response to Argument**

Applicant's arguments with respect to the 35 U.S.C. § 103 (a) rejection of claims 1-3, 5, 7-9 and 11-12 as being unpatentable over Kasada et al in view of Sabi et al are not persuasive. First, Kasada specifically discloses the use of a methomethine cyanine dye having organic dye compounds wherein both ends of the monomethine chain are composed of benzimidazole, indolenine, benzoselenazole, benzothiazole, or quinoline (see Kasada, col. 14 lines 49-67 through col. 15 lines 1-9). Applicant attacks the Kasada reference based on its disclosure of other materials and compositions which Kasada discloses as alternatives. The formulas



presented by Kasada are exemplary embodiments which show the structure of some of the compounds, and in no way limit or eliminate Kasada's specific disclosure of the monomethine chain with the compounds used by applicant. While the Kasada reference does present a large number of compositions which are not those used by applicant, the disclosure of those compositions is irrelevant to the grounds of the rejection because Kasada specifically discloses the use of applicant's composition. Finally, Kasada's disclosure is not a broad disclosure which happens to contain applicant's particular composition as asserted by applicant, but is rather a comprehensive disclosure of a number of different compositions which can be used for a similar purpose. The fact that the disclosure is comprehensive cannot negate the specific disclosure of the particular compositions which applicant is relying upon.

With respect to applicant's arguments that Kasada et al fails to disclose that the dyes have a minimum value  $n_{\min}$  of their refractive index  $n$  within the range claimed by applicant, this argument is not persuasive because the refractive index of a material is inherent to the particular material. Kasada's disclosure of the same monomethine cyanine dyes used by applicant satisfies the limitation regarding the refractive index because the same material inherently has the same refractive index.

#### **(11) Related Proceeding(s) Appendix**

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

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For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

/Tawfik Goma/

Examiner, Art Unit 2627

Conferees:

/Joseph H. Feild/

Supervisory Patent Examiner, Art Unit 2627

/William Korzuch/

Supervisory Patent Examiner, Art Unit 2627